



Department of Human Resources  
HEALTH DIVISION

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DOCKET NUMBER

PROPOSED RULE

PR-20

27

(45 FR 18023)

Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Docketing and Service Branch

Dear Sirs:

This letter is a reply to your request for public response to your proposed rule changes. You will find listed below comments due June 18 on 10 CFR Part 20, Radiation Protection Standards. Paragraphs are numbered as shown in the Federal Register, March 20, 1980.

I. Essential Elements

a. Principles

- (1) Where an attempt is made to assess the risk of neutron exposures, the linear approach to dose vs. risk (or injury) may not be adequate if you consider energy as the only determinant for a quality factor. The reason for this lies in the work by Rossi et al. (reported in "Radiation Research") which shows RBE increasing at lower doses. This might require at low doses exponential buildup or grow-in of a damage factor to add to the linear approach to gamma dose.
- (3) Where dose equivalent limits are set for the public, what term or unit would you propose to use when you approach the average citizen? The Sievert, The Gray, the rem?
- (4) When describing risks of a radiation effect to an employee, how should the employer define his liability limits to compensate the employee? Would there be a statute of limitations implied which would parallel the latent or induction period of the ill-health effects? Would the employer be required to post some bond in perpetuity to pay for injuries after the company is defunct in the future?



Acknowledged by card. 6/17/80. mdv

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b. Occupational Exposures

- (2) Susceptible groups may be defined perhaps better by contrasting them to less susceptible groups (e.g., older workers). A variant standard based only on sex may meet with more worker or feminist resistance than if it were based on reproductive expectancy. It would be hard to argue about genetic risks at low doses for post menopausal women, vasectomized men, etc. Naturally, this is a delicate issue.
- (3) Controls on transient workers may be difficult without some form of worker registry. This need not be offensive and could gain acceptance as a way to screen out high-risk individuals with criminal records. Unions very often exert a rather positive role in identifying acceptable workers. Whatever the control mode, it should allow for a military-civilian interface, particularly where "moonlighters" are apt to be underpaid G.I.'s.

c. General Public Exposures

- (4) Would siting of "other facilities" extend into hospital planning? Perhaps the already existing concepts are sufficient, unless the amounts of shielding required are altered.
- (5) How can you set an emergency acceptable level for the population other than what is normally allowed? Who would have the power to decide when to initiate the exception to the rule? Would you propose a "women and children first" clause?
- (6) Limits for contamination, burial, storage, and effluent release all need to be closely linked. The thought here is to ask for assurance that the limits and alternatives be workable and compatible.

d. Protection programs

- (1) You need to define, also, the instructors' credentials.
- (2) Liability of managers needs to be more clearly asserted in the situations where radiation exposures occur in more than one area, e.g., Nuclear Medicine and Radiology.
- (9) Measurement calibration and standards need to be carefully defined, as well as attainable and enforceable.

e. Records

- (3) Files on instrument calibration methods and logs should be kept at least as long as personnel dose records are available.

f. Reporting

- (5) Incident notification might be more productive if done like the FAA whereby anonymous comments are welcomed for near-miss events.

II. Part 20: Improvement Areas

- a. (1) Your comment "in terms understandable to laymen" warrants special praise. Hopefully, you will be able to avoid unstated cross references. For example, rather than citing only a paragraph number, why not go ahead and use a little extra space to summarize the information then cite the paragraph number? Above all, avoid the kind of authors who prepared the income tax instructions. Why not put out a document which can be read and understood at the level and style of Readers Digest. Eschew Obfuscation.
- (2) A clearer definition of "collective doses" is needed. The term sounds clever enough to encompass medical doses, as well as occupational. Is that your intent?
- b. (1) It is reasonable to assume that some workers would want internal dose estimates combined with the external ones. At least, they should be entered on the same document in some way. Managers will no doubt fight this, and proclaim insurmountable paperwork barriers as well as gross internal dose estimation errors. You may find additionally that "moonlighters" might not want this decrease in their opportunity to work by having internal dose calculations included in their exposure limits, e.g., a "nuc-med" tech working at a reactor part time.
- (2) Annual limits for intake may pose problems for regulators who have to define the maximum acceptable levels in working environments. Enforcement could become more a case of dose or body burden verification if no duration/concentration quantities are specified.
- (4) Feminists may come up in arms about a different standard for women. The male members of a work crew might resolve to get greater pay because they cannot "get out of hot jobs."
- c. General Public
- (2) Any changes from concentrations to annual intake limits must be carefully worded to insure age and sex differences are well understood by the public.
- (4) Overexposure action levels presume an ability of licensees to make reasonably good dose estimates. Do you propose some margin for error on their part? If so, would you set lower limits excessively low, just in case, to protect the worker (or managers from liability)?

d. Radiation Protection Program

- (1) Much was left unsaid at this point. You need to address the benefits vs. risks of a public employee or private contractor doing safety checks. The depth and frequency of the checks, as well as the qualification of the "checker," need to be specified. All this varies from state to state, but there could be at least a baseline program definition.

e. Reporting

- (1) Routine reporting of internal exposures might impose an overburden on the licensee's bioassay program, but could and should go along with the combined internal and dose assessment program. You should specify where all this information should go as well as the storage format. If done poorly, the problem 25 years from now would be worse than today's problems in finding the exposures of military A-bomb test shot participants. Who would be the lead agency for this information if x-ray doses are combined with gamma ray doses. NRC and BRH would need to collaborate. Where would states interface, if at all? Another comment on reporting: You may want to adjust accident reporting criteria and deadlines. Some accidents would warrant an alert in less than 8 hours.

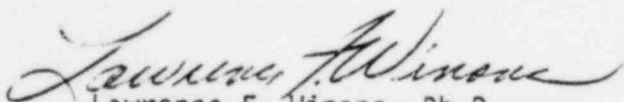
f. Miscellaneous

- (1) Systeme Internationale units will be difficult to comprehend for the public. A change now may generate a mistrust in the minds of laymen.
- (2) There should be clear, continuous instrument calibration information, and it must be kept at least as long as the personnel exposure records are stored. This should include detailed descriptions of how instruments are used on the job so that future investigations can guess at the credibility of the readings in the records.

g. Added

- (1) Public information and communication guides are an intimate part of radiation incident or accident response; yet you omit this completely. Why!?

Sincerely,



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